## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A process for manufacturing composite structural insulated panels comprising the steps:

sequentially transporting lower boards via a conveying system through an application zone ~~where~~ wherein a multi-barrel extruder system mixes and applies a catalyzed foam mixture ~~is applied~~ to one face of each successive lower board;

sequentially depositing upper boards over the catalyzed foam mixture as it expands while the lower boards are transported from the application zone via the conveying system; and

continuing to transport the lower boards, expanding foam mixture, and upper boards via the conveying system through a curing apparatus such that structural insulated panels are formed having a foam core of a selected thickness that is adhered to upper and lower boards.

2. (Original) The process of claim 1, wherein a lower board placement device is used to position the lower boards on the conveying system.

3. (Original) The process of claim 2 wherein an upper board placement device is used to sequentially deposit upper boards on the catalyzed foam mixture as it expands while the lower boards are transported from the application zone via the conveying system.

4. (Original) The process of claim 1, wherein upper and lower boards selected from the group comprising oriented strand board, gypsum board, plywood,

waferboard, or any combination thereof are sequentially transported and sequentially deposited, respectively.

5. (Original) The process of claim 1, wherein upper and lower boards having a thickness of 7/16 inch (11.1 mm) are sequentially transported and sequentially deposited, respectively.

6. (Original) The process of claim 1, wherein a catalyzed foam mixture to form a polyurethane or polyisocyanurate foam is applied to one face of each successive lower board.

7. (Original) The process of claim 2 wherein the lower boards are placed on a conveyor using the lower board placement device and the conveyor transports the lower boards through the foam application zone.

8. (Original) The process of claim 3 wherein the lower boards are placed on a conveyor using the lower board placement device, the conveyor transports the lower boards through the foam application zone and the conveyor transports the lower boards with the catalyzed foam mixture applied thereon through the upper board placement device.

9. (Original) The process of claim 8 wherein the conveyor transports the lower boards with the catalyzed foam mixture applied thereon and the upper boards deposited thereon through the curing apparatus.

10. (Original) The process of claim 9 wherein the conveyor moves continuously at a rate of 20 to 60 ft./min.

11. (Original) The process of claim 10 wherein a catalyst is mixed with other foam making ingredients as a last mixing step before depositing the catalyzed foam mixture onto the lower boards.

12. (Original) The process of claim 10 wherein the sequentially transported lower boards maintained at a spaced separation and are positively driven by buttresses that project from the conveyor.

13. (Cancelled).

14. (Original) The process of claim 1 wherein continuing to transport the lower boards, expanding foam mixture, and upper boards via the conveying system through a curing apparatus comprises transport through heating and cooling sections of the conveying apparatus.

15. (Original) The process of claim 1 further comprising trimming the structural insulated panels and cutting them into pieces of a desired size.

16-27. (Canceled)

28. (New) The process of claim 1, wherein the multi-barrel extruder system has a single dispensing head for depositing the catalyzed foaming mixture on the lower boards.

29. (New) The process of claim 1, wherein each barrel of the multi-barrel extruder system has an associated reservoir for introducing foam ingredients into the extruder barrels.

30. (New) The process of claim 29, wherein the foam mixture further comprises isocyanate, polyol, foaming agent, and catalyst.

31. (New) The process of claim 30, wherein the catalyst is provided from an associated reservoir to a dispensing head.

32. (New) A process for manufacturing composite structural insulated panels, each structural insulated panel having an upper board, a lower board, and a foam mixture therebetween, the process comprising:

sequentially transporting the lower boards via a conveying system through an application zone wherein a catalyzed foam mixture is applied to one face of each successive lower board;

the catalyzed foam mixture expanding upon application on the lower boards;

the conveying system comprising a support to keep the upper boards at a desired height and placement above the respective lower boards;

sequentially depositing upper boards on the support of the conveying system at a complementary position over the lower boards and expanding foam mixture as the lower boards are transported from the application zone via the conveying system; and

continuing to transport the lower boards, expanding foam mixture, and upper boards via the conveying system through a curing apparatus such that structural insulated panels are formed having a foam core of a selected thickness that is adhered to upper and lower boards.

33. (New) The process of claim 32, wherein the support is a pair of guide rails, each guide rail being positioned along a respective side of a portion of the conveying system.

34. (New) The process of claim 32, wherein the formed structural insulated panels do not include the support.